Cable Financial Returns: Competitive Systems

Financial Assumptions			
Interest Rate		8.50%	FCC Rpt& Order, Docket 93-215, 30Mar94, p102
Debt Leverage on Capital Investment		50%	FCC Rpt& Order, Docket 93-215, 30Mar94, p106-108
Debt Repayment			
Starting Year		3	
Term		9	
Overall Rate of Return (AfterTax)		11.25%	FCC Rpt& Order, Docket 93-215, 30Mar94, p108
After Tax Return to Equity		14%	Derived as in FCC Rpt& Order, Docket 93-215, 30Mar94, p108: Eq.Ret=(Avg Return-(%Debt*Debt Cost))/%Equity
Plus Allowed Return for Tax @ Rate=	34%	7.21%	Gross up as in FCC Rpt& Order, Docket 93-215, 30Mar94, p83. Formula: Gross up = ((Tax rate/(1-Tax Rate))* Rate of return
Equity Rate of Return (PreTax)		21.21%	
Terminal Multiple of Cash Flow		9	CF Multiple = 1/Rate of Return

Cable Franchise		**ADL Code**
Initial Capital Expenditure per Subscriber	$902	QQ140
Annual Capital per Subscriber	$0	Assumed
Revenue per Subscriber	$261	QQ140
Expenses per Subscriber	$180	QQ140
Cash Flow per Subscriber	$81	QQ140
Cash Flow growth assumption (per Yr)	1%	Real growth - assumed

Financial Performance	**Year-->**	1	2	3	4	5	6	7	8	9	10
Annual cash flows		$81	$82	$83	$83	$84	$85	$86	$87	$88	$89
Plus Terminal Cash											$787
Total Cash flows		$81	$82	$83	$83	$84	$85	$86	$87	$88	$876
Interest Cost		$19	$38	$36	$30	$25	$19	$14	$8	$3	$0
Net CF Available for Debt Repayment		$62	$43	$47	$53	$60	$66	$72	$79	$85	$876
Debt Repayment		$0	$0	$64	$64	$64	$64	$64	$64	$64	$0
Annual Net CF for Equity Returns	($451)	$62	$43	($17)	($11)	($5)	$2	$8	$14	$21	$876
IRR to Equity	9%										
NPV Per Subscriber											
w/Discount Rate= 21%	($206)										

Debt Repayment/Interes

	Year--->	0	1	2	3	4	5	6	7	8	9	10
Debt as % investment=	50%											
Annual Investment ($)			902	0	0	0	0	0	0	0	0	0
New Debt ($/year)			451	0	0	0	0	0	0	0	0	0
New Debt (cum)			451	451	451	451	451	451	451	451	451	451
DEBT REPAYMENTS												
New Debt												
new in year 1			0	0	64	64	64	64	64	64	64	0
new in year 2				0	0	0	0	0	0	0	0	0
new in year 3					0	0	0	0	0	0	0	0
new in year 4						0	0	0	0	0	0	0
new in year 5							0	0	0	0	0	0
new in year 6								0	0	0	0	0
new in year 7									0	0	0	0
new in year 8										0	0	0
new in year 9											0	0
new in year 10												0
new in year 11												
new in year 12												
new in year 13												
new in year 14												
new in year 15												
DEBT REPAYMENT ($/yr)			0	0	64	64	64	64	64	64	64	0
DEBT REPAYMENT ($ cum)			0	0	64	129	193	258	322	387	451	451
PRINCIPAL OUTSTANDING(eoy)			451	451	387	322	258	193	129	64	0	0
INTEREST ($/Year)			19	38	36	30	25	19	14	8	3	0

Cable Financial Returns: Competitive Systems

Financial Assumptions			
Interest Rate		8.50%	FCC Rpt& Order, Docket 93-215, 30Mar94, p102
Debt Leverage on Capital Investment		50%	FCC Rpt& Order, Docket 93-215, 30Mar94, p106-108
Debt Repayment			
Starting Year		3	
Term		9	
Overall Rate of Return (AfterTax)		11.25%	FCC Rpt& Order, Docket 93-215, 30Mar94, p108
After Tax Return to Equity		14%	Derived as in FCC Rpt& Order, Docket 93-215, 30Mar94, p108: Eq.Ret=(Avg Return-(%Debt*Debt Cost))/%Equity
Plus Allowed Return for Tax @ Rate=	34%	7.21%	Gross up as in FCC Rpt& Order, Docket 93-215, 30Mar94, p83. Formula: Gross up = ((Tax rate/(1-Tax Rate))* Rate of return
Equity Rate of Return (PreTax)		21.21%	
Terminal Multiple of Cash Flow		9	CF Multiple = 1/Rate of Return

Cable Franchise		**ADL Code**
Initial Capital Expenditure per Subscriber	$650	QQ145
Annual Capital per Subscriber	$0	Assumed
Revenue per Subscriber	$306	QQ145
Expenses per Subscriber	$222	QQ145
Cash Flow per Subscriber	$84	QQ145
Cash Flow growth assumption (per Yr)	1%	Real growth - assumed

Financial Performance	Year-->	1	2	3	4	5	6	7	8	9	10
Annual cash flows		$84	$85	$86	$87	$87	$88	$89	$90	$91	$92
Plus Terminal Cash											$817
Total Cash flows		$84	$85	$86	$87	$87	$88	$89	$90	$91	$908
Interest Cost		$14	$28	$26	$22	$18	$14	$10	$6	$2	$0
Net CF Available for Debt Repayment		$70	$57	$60	$65	$70	$74	$79	$84	$89	$908
Debt Repayment		$0	$0	$46	$46	$46	$46	$46	$46	$46	$0
Annual Net CF for Equity Returns	($325)	$70	$57	$14	$18	$23	$28	$33	$38	$43	$908
IRR to Equity	19%										
NPV Per Subscriber											
w/Discount Rate= 21%	($31)										

Debt Repayment/Interes

	Year--->	0	1	2	3	4	5	6	7	8	9	10
Debt as % Investment=	50%											
Annual Investment ($)			650	0	0	0	0	0	0	0	0	0
New Debt ($/year)			325	0	0	0	0	0	0	0	0	0
New Debt (cum)			325	325	325	325	325	325	325	325	325	325
DEBT REPAYMENTS												
New Debt												
new in year 1			0	0	46	46	46	46	46	46	46	0
new in year 2				0	0	0	0	0	0	0	0	0
new in year 3					0	0	0	0	0	0	0	0
new in year 4						0	0	0	0	0	0	0
new in year 5							0	0	0	0	0	0
new in year 6								0	0	0	0	0
new in year 7									0	0	0	0
new in year 8										0	0	0
new in year 9											0	0
new in year 10												0
new in year 11												
new in year 12												
new in year 13												
new in year 14												
new in year 15												
DEBT REPAYMENT ($/yr)			0	0	46	46	46	46	46	46	46	0
DEBT REPAYMENT ($ cum)			0	0	46	93	139	186	232	279	325	325
PRINCIPAL OUTSTANDING(eoy)			325	325	279	232	186	139	93	46	0	0
INTEREST ($/Year)			14	28	26	22	18	14	10	6	2	0

Inflation following the original investment causes the investment's dollar price to rise merely because the price is stated in dollars that are worth less than before. Hence, the original cost method usually underestimates the true value of a firm's tangible assets, because it values those assets at the time of purchase, which might have been many years in the past.

The book value of assets equals their original cost minus accounting depreciation. There is no reason to expect real, economic depreciation to equal accounting depreciation. Accounting depreciation usually follows a schedule specified by the tax code. Economic depreciation, which market value reflects, depends on changes in the actual usefulness of the asset. A divergence between economic and accounting depreciation will be reflected in a divergence between the market and book value of the assets.

Organizational capital refers to a firm's non-physical assets created by its employees and managers. Organizational capital includes all of the business relationships of a firm, that is, the myriad of implicit and explicit contracts with managers, employees, suppliers, and customers. Organizational capital also includes the value of the information embedded in a firm's operating procedures; the value of its brand name and reputation; and the value of its supply and distribution networks. Organizational capital is not derived from monopoly power and it does not disappear in a competitive environment.

Economic rents include both quasi-rents and monopoly or locational rents. Economic rents are payments to factors of production in excess of the amount necessary to secure the services of those factors. Economic rents are an important source of information in an economy. They signal the potential for above-normal profits and thus induce entry and increased investment. Absent some "barrier," entry and increased investment will eventually reduce profits to their normal levels, and the

existence of above normal profits directs resources to their highest valued use.[4]

Quasi-rents refer to rents that exist only temporarily, until they are competed away. Quasi-rents can be earned by a firm on its physical assets and on its organizational capital. Quasi-rents can arise from the foresight or luck to have invested in the right assets at the right time. For example, a new technology might make existing assets more valuable. With regard to the cable industry, for example, the revenue potential from digital compression foreseeable today may not have been foreseen in the past.

Monopoly or locational rents are due to market power. Unlike quasi-rents, monopoly rents do not dissipate in a competitive environment. While these rents also serve as a signal, some "barrier" impedes entry and the rents persist.

III. Economy wide market-to-book ratios

In general, there is no reason to expect the accounting or book value of assets to approximate the market value of those assets. This fact was brought home with great clarity in the savings and loan crisis, which resulted in part from the practice of bank regulators mistaking the book value of mortgages held as assets by thrifts for their market value, which had declined disastrously.

Even in the absence of market power, inflation, accelerated depreciation schedules and organizational capital will often cause the market value of an ordinary firm's assets to exceed its book value.[5] In particular, the value of a firm's assets in an acquisition will generally far exceed the book value of the assets.

---

4 On the general topics of rents, profits, and competitive returns, see Stigler, George, *The Theory of Price*, Fourth Edition, 1987, chapters 11 and 16; and McCloskey, Donald N., *The Applied Theory of Price*, Second Edition, 1985, chapter 14.

5 See the appendix to this paper for a more detailed discussion.

Table 1 shows the average equity market-to-book ratios from 1977 to 1992 for all firms in the S&P 500 index. The average ratio has always exceeded one; it equaled 2.65 in 1992. Because long-run monopoly rents cannot be ubiquitous for all the firms in the S&P 500, monopoly power cannot account for the excess of market value to book value. Furthermore, since the market value of U.S. firms generally exceeds their book value, it is unreasonable to attribute that excess to monopoly power for any industry, including the cable television industry.[6]

IV. Harm from adopting an original cost ratebase

The Commission's tentative conclusion to use the original cost of the plant in service as the rate base means that cable operators will earn returns only on tangible, accounting-based costs — on the depreciated book value of assets. That policy is supportable only if the entire difference between such costs and market value are monopoly rents. As the evidence above indicates, that cannot be the case.

The definition of rate base contemplated by the Commission will cause under-investment in the cable television industry in the future. There will be no incentive to invest in cable industry assets if only part of the market value of those assets are allowed to earn a competitive return.

If eliminating intangible assets from the rate base were viewed as a one-time tax on previously accumulated capital, a tax which is neither anticipated nor expected to be repeated, then the tax would not be distortionary. The investment already occurred and cannot be undone. Such taxes, however, do create distortions if investors worry that the

---

6 In a recent decision, the Commission discussed q, the ratio of a firm's market value to the replacement cost of its assets, rather than to its book value. The Commission noted a number of reasons why market value might exceed replacement cost in a competitive industry, including measurement errors dealing with intangibles and above average risk. All these reasons also could make market value exceed book value. "In the Matter of Competition, Rate Deregulation and the Commission's Policies Relating to the Provision of Cable Television Service," FCC 90-276, Adopted July 26, 1990, ¶59.

government will impose another such tax in the future.[7] The possibility of another levy of this type increases investors' uncertainty about investment returns, leading them to apply a higher threshold rate of return to future investment projects. Therefore, projects that would have been undertaken will be foregone, hurting both cable operators and consumers.

There will be a deleterious effect of the Commission's proposal on existing cable industry assets as well. Once the rate base is defined to exclude or undervalue certain assets, it will reduce the incentive to repair and maintain those assets. Existing assets will be allowed to decay, and there also will be a diminished incentive to upgrade equipment in keeping with technological developments.

In sum, the incentives with regards to repairing, maintaining, and upgrading existing assets, and with regards to expanding the industry, will be perverse. Consumers will be harmed.

The use of original cost also could have serious financial consequences for the cable industry. Many cable systems changed hands in the late 1980s at prices far in excess of the book value of the assets acquired. The difference between the seller's book value and the acquirer's price was allocated in varying proportions to a write-up of tangible asset value, to amortizable franchise and subscriber list values, and to goodwill. If the Commission proposes to exclude all of this from the rate base, it will deprive these systems of a large part of their asset values that is not attributable to monopoly rents. The practical result may be that some systems' earnings fall by so much that they will be unable to service their debt.

This problem is not limited to those systems that recently changed hands, it affects all systems. Systems that did not change hands nevertheless have a market value that in all probability exceeds book value.

---

7 See, Barro, Robert, "Retroactivity—Bungled Larceny," WSJ, Aug. 17, 1993, p. A14 for a discussion of taxes on prior behavior and their distortionary effects.

To use original cost to value such systems is to deprive them of property value that has no connection to monopoly profits.

V. Summary

The original cost method usually underestimates the true value of a firm's tangible assets, because it values those assets at the time of purchase, which might have been many years in the past. Replacement and reproduction cost methods attempt to correct this deficiency, but these methods share a second and potentially more serious problem with the original cost method; they omit intangible assets.

A cable system cannot effectively conduct its business without intangible assets, including customer goodwill, contracts, technical expertise, and a skilled management team. Original, reproduction, or replacement cost methods of valuing the ratebase ignore these important assets. Denying cable operators the value of their investments in intangible assets would effectively constitute the confiscation of that investment.

If the Commission shows itself willing to confiscate the value of past investments, it will be expected to do so again. Hence, if the Commission does not allow the rate base to reflect the value of all assets, tangible and intangible, there will be an under investment in maintaining existing assets and investing in new assets. The growth of the cable industry will likely be substantially impeded, making both cable owners and consumers worse off.

Appendix[8]

Consider the market-to-book ratio, *MTB*, as usually defined wherein the market value, *M*, may differ from its tangible-asset book value, *B*. In this case let $B = T$, tangible assets, and

$$MTB = \frac{M}{T}. \tag{1}$$

Consider alternatively, an accurate-accounting market-to-book ratio, MTB^*, wherein the true book value, B^*, is adjusted to account for inflation, *I*; organizational capital, *OC*; other factors, *OF*, such as quasi-rents, and the divergence between accounting and economic depreciation; and monopoly rents, *R*. For the accurate-accounting case, $B^* = T + I + OC + OF + R$, and

$$MTB^* = \frac{M}{T + I + OC + OF + R}. \tag{2}$$

Combining Equations (1) and (2) to find the ratio of *MTB* to MTB^*, yields

$$\frac{MTB}{MTB^*} = 1 + \frac{I}{T} + \frac{OC}{T} + \frac{OF}{T} + \frac{R}{T}. \tag{3}$$

Because Equation (2) includes an adjustment to B^* to account for the factors that cause *B* to differ from *M* in Equation (1), $M = T + I + OC + OF + R$ and $MTB^* = 1$. Thus Equation (3) can be rewritten as

$$MTB = 1 + \frac{I}{T} + \frac{OC}{T} + \frac{OF}{T} + \frac{R}{T}. \tag{3'}$$

Equation (3') shows how to account for the components of value other than tangible assets. Each component's contribution to the market-to-book

---

8 The analysis here extends McFarland, Henry, "Evaluating *q* as an Alternative to the Rate of Return in Measuring Profitability," *Review of Economics and Statistics*, 1988, 614-622.

ratio's difference from one is the ratio of that value to tangible asset value. An example will show the simplicity of the concept.

Consider a firm that invested in plant in service for $10. Since the original investment, another firm acquired the plant for $18 for an ostensible market-to-book ratio of 1.8. If, in the time following the original investment, inflation added $1 in (current dollar) value, organizational capital added $5, other factors added $1, and monopoly rent added $1, then the entire market to book ratio can be accounted for by Equation (3').

$$1.8 = 1 + \frac{1}{10} + \frac{5}{10} + \frac{1}{10} + \frac{1}{10}$$

Knowing any three of the additional components allows the fourth to be inferred, because market value and tangible asset value are known.

Table 1

Market to Book Ratios for the S&P 500

Year	Market/Book Ratio
1977	1.20
1978	1.13
1979	1.15
1980	1.32
1981	1.12
1982	1.25
1983	1.41
1984	1.37
1985	1.69
1986	1.91
1987	1.84
1988	1.97
1989	2.40
1990	2.16
1991	2.59
1992	2.65

Source: Merrill Lynch

ATTACHMENT G

"The Equity Cost of Capital for Cable Operators is High and Variable"

Economists Incorporated
August, 1993

(originally submitted as Appendix B to
NCTA Comments in MM Docket No. 93-215)

APPENDIX B

The Equity Cost of Capital for Cable Operators is High and Variable

I. Introduction

The equity cost of capital paid by six large cable operators is significantly higher than that paid by AT&T, GTE, and the Regional Bell Operating Companies. Moreover, among the cable operators examined here, there are considerable differences in the cost of their equity capital. These results suggest that cable operators should be allowed a rate of return on equity that exceeds the rate allowed for regulated telephone companies, and that setting a uniform rate of return for all cable operators is inappropriate.

The present results are based on an empirical analysis of the six cable operators whose stock price data readily accomodate risk premium analysis. The six companies do not constitute a representative sample. The results, however, do have implications for other cable operators and for other funding sources. In fact, the cost of capital for small cable operators is likely to be higher than that for large operators. And a cable operator that must pay dearly for capital in equity markets is likely to have to pay dearly for capital in debt markets too.

This paper motivates the standard methodology for estimating a company's market risk, β, which is the key parameter for measuring its equity cost of capital. Estimates of β are presented and interpreted.

II. Measuring the cost of equity

In the Notice of Proposed Rulemaking, the Commission notes that there are two common methods of estimating the cost of equity: discounted cash flow analysis, and risk premium analysis.[1] Neither method can be

---

1 FCC, "Notice of Proposed Rulemaking," MM Docket No. 93-215, July 15, 1993, paragraph 51, and footnote 55.

tractably applied to the vast majority of cable operators, and the discounted cash flow method poses problems for even the largest cable operators.[2] Risk premium analysis, however, can be applied to large cable operators and inferences can be drawn for the others.

The use of risk premium analysis to determine the equity cost of capital relies on the fact that the equity cost of capital is paid to investors as the total return they receive on a firm's equity.[3] The return is higher for a risky investment than for a safe investment. A firm's cost of capital exceeds the rate earned on an investment that is "risk free" corresponding to its degree of risk. Portfolio theory guides the proper measurement of risk and its relation to return.

In standard portfolio theory, required return measurement begins with the return commensurate with a risk free instrument (such as a U.S. Treasury Bill) and adds the return commensurate with the risk of the firm in question. Portfolio theory presumes that investors are not compensated for risks they can avoid. Only unavoidable risks lead to higher returns.

The most commonly applied portfolio model is the Capital Asset Pricing Model (CAPM), which receives prominent treatment in any finance textbook. The CAPM distinguishes between avoidable risk and unavoidable risk through a statistical comparison of the relevant firm's equity returns to total market returns. Risk which is unique to the firm, and hence independent of the market, can be avoided through diversification. Only that component of risk which is related to the market is unavoidable. The unavoidable component of a firm's risk translates into a higher equity cost of capital for that firm.

The size of the unavoidable risk, or market risk, is measured by a coefficient referred to as β, which measures the extent to which changes in

---

2 The discounted cash flow method relies on the presence of regular dividends as a means of disbursing earnings to shareholders, and on a past earnings record that facilitates extrapolation to the future. In general, cable operators do not possess these characteristics.

3 Returns are the percent change in price from period to period. Total return includes both dividends and capital gain.

the firm's stock price are related to changes in the market price. If β is 1.0, then a 10 percent change in the market is associated with a 10 percent change in the price of the firm's stock in the same direction. If β is 1.5, then a 10 percent change in the market is associated with a 15 percent change in the price of the firm's stock. Firms whose βs are above one are riskier than the market as a whole.[4]

The next section uses the portfolio theory described here, to draw comparisons between cable operators and other firms.

III. Large cable operators' market risk relative to other firms

Value Line, which is an independent and widely used source of investment information, provides estimates of β for 3 cable operators. Table 1 shows those estimates and compares the Value Line estimates for cable companies to those for AT&T, GTE, and the Regional Bell Operating Companies. The β estimates should be interpreted as describing, in terms of unavoidable market risk, each company's risk relative to the market. The unavoidable market risk is the critical input to a firm's equity cost of capital. Thus, for example, Cablevision's market risk is 35 percent higher than the risk premium of the market as a whole, and its equity cost of capital is higher than the risk free rate by 135 percent of the risk premium associated with the equity market as a whole.

Table 1 also indicates that the three cable companies have much higher values of β than do telephone companies. Hence, cable companies are riskier investments than telephone companies and must earn a higher rate of return to attract capital. It follows that the allowed rate of return for cable companies must exceed the allowed rate for telephone companies.

---

4 The CAPM β is used to estimate a firm's equity cost of capital as follows. To the risk-free rate is added a term accounting for the equity market's return in excess of the risk-free return. If β is 1.0, then the firm's equity cost of capital is simply the risk-free rate plus the market premium. If β is 1.5, then the firm's equity cost of capital is the risk-free rate plus the market premium multiplied by 1.5. This relation is described algebraically as $R_C = R_f + \beta(R_m - R_f)$, where R_C is the firm's cost of capital, R_f is the risk-free rate, and R_m is the market rate of return.

Table 1:
Value Line Estimates of β for Cable and Telephone Companies[5]

Company	β
Cable	
Cablevision	1.35
Comcast	1.55
Tele-Communications Inc.	1.55
Telephone	
AT&T	.95
Ameritech	.85
Bell Atlantic	.95
Bell South	.85
GTE	.90
Nynex	.85
Pacific Telesis	.90
Southwestern Bell	.95
U.S. West	.90

IV. Estimates of the market risk of large cable operators

To verify the Value Line estimates of β and to obtain more estimates, we estimated β for the six large cable operators for which data necessary to calculate relevant and reliable β estimates were available.[6] Three of the firms are the same as those estimated by Value Line.

The coefficient β can be estimated from the regression equation,

$$R_C = a + \beta * R_m,$$

where a and β are estimated coefficients, and R_C and R_m are the rate of return on the individual cable operator and on the market. We used the S&P

5 Value Line, "Summary of Advice and Index," May 7, 1993.

6 The firms chosen were in the list of cable operators in Kagan, *The Cable TV Financial Databook*, June 1993. For inclusion, 80 percent of the firm's revenue must have been cable revenue, and the stock must have been trading regularly enough to allow reliable regression estimation. The six firms are Adelphia, Cablevision, Century, Comcast, Jones Intercable, and TCI.

500 to represent the market rate of return.[7] We estimated the regression using weekly data from June 2, 1989, to August 12, 1993.

For the cable operators examined here, the market risk of individual cable operators exceeds the risk in the market as a whole, generally by 30 to 50 percent.[8] Significant differences exist, however, among the βs for individual cable companies; they range from a minimum of 1.03 to a maximum of 1.53. Such differences in β suggest that different cable companies have very different costs of equity. Therefore it would be inappropriate to apply a uniform statutory cost of equity to all cable operators.

V. Conclusion

Using risk premium analysis to estimate the cost of equity reveals that large cable operators are riskier than AT&T, GTE, and the Regional Bell Operating Companies. This higher risk must be compensated for by allowing a higher rate of return on equity for cable operators than is allowed for telephone companies. The analysis also indicates that the level of risk varies among cable operators and that the cost of equity needs to be determined on a case-by-case basis.

These results, moreover, reach beyond the equity cost of capital for large cable companies, and have significant implications for the cost of debt capital, and for smaller cable operators. Other things equal, an operator with high equity costs is also likely to have high debts costs. And the cost of capital for smaller cable operators is likely to be higher than that for large operators.

---

7 We also estimated βs using the S&P 400 as the market rate of return, but the results were not significantly different, so they are not displayed. Because the S&P 500 is based on a wider selection of firms, results using that index are preferable.

8 Our β estimates for Cablevision, Comcast, and TCI are very similar to those obtained by Value Line. All six estimates are significant at the 95 percent level.

ATTACHMENT H

"Evaluation of FCC Methodology for 1994 Rate Order"

Arthur D. Little, Inc.

June 1994

Arthur D Little

Arthur D Little

Evaluation of FCC Methodology for 1994 Rate Order

Report to National Cable Television Association (NCTA)

June 1994

Arthur D. Little, Inc.
Acorn Park
Cambridge, Massachusetts
02140-2390

Reference 46535

Table of Contents

Page

Tables

Charts

I. Executive Summary

A. Overall Conclusion

The FCC lacks a valid analytical basis for its guidelines to reduce cable TV rates, now being implemented in the Commission's "1994 Rate Order"[1].

An estimated price differential between competitive and non-competitive cable franchises is fundamental to the FCC's guidelines on cable rates. Arthur D. Little, Inc.'s evaluation of the FCC's methodology, conducted at the request of the National Cable TV Association (NCTA), concludes that the FCC's estimation of a competitive price differential is invalid. As a result, the FCC's guidelines are now called into question.

We find that:

- The FCC's price differential applies only to franchises that are part of small cable systems[2] which are non-representative of the industry.
- When we take cable system size into account in calculating the competitive price differential, which the FCC failed to do, we find the differential reduced almost to zero.
- Many of the small-system franchises in the FCC's competitive sample are commercially non-viable or otherwise atypical of the industry in their financial structure. Nevertheless, such franchises contribute to establishment of rate guidelines for the entire cable industry.

B. Background on FCC Rate-Setting Approach

The FCC employs a statistical model to determine effects of competition on cable rates, using cable franchise data collected from a survey of system operators. These data define attributes of 370 cable franchises defined as non-competitive, and of 50 others deemed to be operating in competitive markets.

In comparing competitive and non-competitive franchises in its sample, the FCC's model estimates that competition is responsible for a 17 percent differential in cable rates. The Commission directs cable operators to reduce their rates to competitive benchmarks calculated for each franchise using the FCC model individualized with franchise-specific attributes.

[1] Second Order on Reconsideration, Fourth Report and Order and Fifth Notice of Proposed Rulemaking ("1994 Rate Order"), MM Docket No. 92-266, March 30, 1994.

[2] Many cable systems, especially small systems, serve only one franchise area; however, many other systems serve multiple franchise areas. We generally refer in our report to a franchise as "part of" a cable system, even though it may represent the total operations of the cable system.

C. Arthur D. Little Assessment

We performed statistical analyses on the FCC's cable franchise data; we interviewed operators of cable systems in the FCC's sample; and we analyzed the financial performance of many of these systems. These steps produce consistent findings that indicate significant issues concerning the FCC's methodology.

1. Source of Competitive Price Differential

The competitive price differential estimated by the FCC derives primarily from attributes of franchises that are part of small cable systems. Small systems are defined as serving fewer than 5000 subscribers; large systems are defined as serving 5000 or more subscribers.

Our analysis confirms findings reported in the "1994 Rate Order" and verified by the FCC, that there is no price differential between competitive and non-competitive franchises that are part of large cable systems.

Small cable systems serve a tiny minority (approximately 3 percent) of subscribers in the FCC's sample. The 292,000 subscribers served by these systems in the FCC's overall sample represent approximately 0.5% of the industry's 57 million subscribers.

Only 50,000 subscribers are served by small systems whose franchises are deemed by the FCC to be competitive; these subscribers represent less than 0.09% of the industry's subscribers. The 29 small competitive franchises in the FCC's sample represent 0.09% of the industry's 32,000 communities; the systems of which they are a part represent approximately 0.3% of the industry's 11,000 cable systems. The low average revenues of these 29 franchises are largely responsible for the FCC's competitive price differential.

In the cable industry, as in the FCC's sample, small systems are atypical in terms of the number of subscribers they serve; such systems serve less than 14 percent of the industry's total.

2. Relevance of Cable System Size

Small and large cable systems are not the same. Our analyses of the FCC sample data and of data collected in our own survey of operators of FCC-designated competitive systems, indicate that small systems typically have lower per-subscriber revenue requirements than large systems.